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CLEVELAND, OH 44114				
EXAMINER				
HAYES, KRISTEN C				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/550,403

Applicant(s)

KUDOH, TOSHIAKI

Examiner

Kristen C. Hayes

Art Unit

3643

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 September 2006.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-16 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/ISD)
4) ☐ Interview Summary (PTO-413)
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____
Paper No(s)/Mail Date 20050921

DETAILED ACTION

Specification

1. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Objections

2. Claim 1 is objected to because of the following informalities: the step ((B): line 4). It is not known which step the limitation refers to.

3. Claims 1 and 12 are objected to because of the following informalities: crashed (claim 1: line 12, claim 12: line 4). It appears the word should be "crushed".

Appropriate correction is required.

4. Claims 4 and 5 are method claims which depend from an apparatus claim. The examiner assumes that these claims were meant to depend from claim 1, and for purposes of examination has treated them as such.

5. Claims 10 and 12 objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Claim 10 depends from claims 6 and 1. Claim 6 require the choice of (B). The limitations of 10 are previously presented in (B).

Claim 12 depends from claim 1. The limitations of claim 12 are previously recited in claim 1.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7. Claims 2 and 3 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

8. Claim 2 recites the limitation of the soil improving material containing 98%, calcium carbonate by weight, 50-60% alkali content, and 90-100% particles by weight. Calcium carbonate is considered an alkali material; therefore it is unknown why two different percentages of these materials would be needed. Also, the claimed percentages of each material when combined add up to more than 100 percent.

9. Claim 3 recites the limitation of the soil improving material containing 70%, calcium carbonate by weight, 60-65% alkali content, and 90-100% particles by weight. Calcium carbonate is considered an alkali material; therefore it is unknown why two different percentages of these materials would be needed. Also, the claimed percentages of each material add up to more than 100 percent.

10. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

11. Claims 1 and 6-12 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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12. Claim 1 recites the limitation "said burning step" in lines 9, 14 and 15. There is insufficient antecedent basis for this limitation in the claim.
13. Regarding claim 1, it appears the phrases "said burning step" and "said burning conditions" are used interchangeably. This makes it unclear if part (B) of the claim is contained within part (A), as part (A) recites "under burning conditions".
14. Regarding claims 1, 13 and 15, the phrase "and the like" renders the claim(s) indefinite because the claim(s) include(s) elements not actually disclosed (those encompassed by "or the like"), thereby rendering the scope of the claim(s) unascertainable. See MPEP § 2173.05(d).
15. Claims 4, 7, 8 and 9 do not include every limitation of the claims from which they depend (35 U.S.C. 112, fourth paragraph). These dependent claims could be infringed upon without infringing on the basic claim. See MPEP § 608.01(n).

Claim Rejections - 35 USC § 102

16. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

17. Claims 2, 3 and 13-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Kosugi JP 6-207173 (applicant's disclosure).
18. Regarding claims 2, 3 and 13-16 Kosugi discloses a soil improving material derived from scallops containing 98% by weight calcium carbonate, 60% alkali content, and particles with a diameter of 250 micrometers which represent 90-100% of the total weight (In that calcium carbonate is an alkali material and the shells which contain calcium carbonate are the only disclosed components in the soil improving material.)(Kosugi, ¶10009). These claims are

considered to be product-by-process claims. The examiner notes that it has been held that even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. Additionally, the patentability of a product does not depend on the method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985) {See MPEP 2113}.

Claim Rejections - 35 USC § 103

19. Claims 1, 4, 5-9 and 12 rejected under 35 U.S.C. 103(a) as being unpatentable over Kosugi JP 6-207173.
20. Regarding claims 1, 4, 5, 7-9 and 12, Kosugi discloses a method for producing a soil improving material derived from marine resources which comprise calcium carbonate and organic matrices, wherein the soil improving material comprises calcium carbonate existing separately from organic matrix comprising the steps of burning a scallop shell, pulverizing the burnt material, wherein pulverizing comprised crushing the burnt material mechanically (16) and passing the resultant material through a wire sieve (Kosugi, ¶0017: lines 5-6), and wherein the burning step comprises burning at 700°C-900°C (Kosugi, ¶0009). Not disclosed is the size of the mesh or the burning time. However, it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233. Different sized meshes are used in the art as filters separate wanted and unwanted particles based on size. The burning time would be selected depending on the amount of time required produce the desired results (i.e. ash, partially burnt material, etc). The burning time could also be selected depending on what

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amount of time was necessary to kill organisms and bacteria on the shells, as to eliminate bacteria in the soil improving material. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of Kosugi by using a mesh size of 60-80 depending on the desired size of the particles, and to burn for a time of 5-20 or 25-45 minutes.

21. Regarding claim 6, Kosugi further discloses the burning step being carried out under burning conditions for ashing the organic matrix, and in a burning step, a burnt material which consists of undegraded calcium carbonate and ashed organic matrix (Kosugi, ¶10009).

22. Claims 1, 4, 5 and 7-12 rejected under 35 U.S.C. 103(a) as being unpatentable over Hori JP 2001-240416 (applicant's disclosure).

23. Regarding claims 1, 4, 5, 7-9 and 12, Hori discloses a method for producing a soil improving material derived from marine resources which comprise calcium carbonate and organic matrices, wherein the soil improving material comprises calcium carbonate existing separately from organic matrix comprising the steps of burning a scallop shell, pulverizing the burnt material, wherein pulverizing comprised crushing the burnt material mechanically (16) and passing the resultant material through a wire sieve, and wherein the burning step comprises burning at 600°C-1600°C for a certain amount of time (Hori, ¶10006). Not disclosed is the size of the mesh or a specific burning time. However, it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233. Different sized meshes are used in the art as filters separate wanted and unwanted particles based on size. The burning time would be selected depending on the amount of time required produce the desired results (i.e. ash, partially burnt material, etc). The burning time could also be selected depending on what amount of time was necessary to kill organisms and bacteria on the shells, as to eliminate bacteria in the soil improving material. It would have been obvious to one of ordinary skill in the

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art at the time of the invention to modify the method of Hori by using a mesh size of 60-80 depending on the desired size of the particles, and to burn for a time of 5-20 or 25-45 minutes.

24. Regarding claim 10, Hori further discloses a furnace (Hori, ¶0006: line 4). Not disclosed is a source of fuel. However, it is very well known in the art that furnaces require a source a fuel (as evidenced by US 5,022,911, Natural Gas Radiant Heaters [http://web.archive.org/web/20021030185216/http://www.heatershop.com/natural_gas_radiant_heaters.html, 10/30/2002, retrieved from internet: 04/11/2008] and Natural Gas Furnaces [<http://web.archive.org/web/20020424132645/http://www.roanokegas.com/products/appliances/furnaces.html>, 04/24/2002, retrieved from internet: 04/11/2008]). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of Hori by using fuel as it is extremely well known in the art to use fuel to operate a furnace.

25. Regarding claim 11, Hori discloses a device with the limitations of claim 10 but does not disclose the fuel being natural gas or the furnace being a radiant heat furnace. However, the use of natural gas in radiant heat furnaces is extremely well known in extremely (as evidenced by US 5,022,911, Natural Gas Radiant Heaters [http://web.archive.org/web/20021030185216/http://www.heatershop.com/natural_gas_radiant_heaters.html, 10/30/2002, retrieved from internet: 04/11/2008] and Natural Gas Furnaces [<http://web.archive.org/web/20020424132645/http://www.roanokegas.com/products/appliances/furnaces.html>, 04/24/2002, retrieved from internet: 04/11/2008]). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the furnace of Hori so that it was a radiant heat furnace in order to quickly and efficiently burn the shells and to use natural gas as an inexpensive reliable fuel source.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kristen C. Hayes whose telephone number is 571-270-3093. The examiner can normally be reached on Monday-Thursday, 7:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Poon can be reached on (571)272-6891. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

KCH
11 April 2008

Peter Poon
Examiner
Art Unit 3643

/Peter M. Poon/
Supervisory Patent Examiner, Art Unit 3643